

GPS Calibration Report

Project : r3421

TIP Number	R3421C	Date & Time	3:13:50 PM 12/16/04
User name	scranford	Zone	North Carolina 3200
Coordinate System	US State Plane 1983(at ground)	Geoid Model	GEOID99 (Conus)
Horizontal Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88		
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

LOCAL SITE INFORMATION

Localized around	
Latitude	34°57'05.57766"N
Longitude	79°50'45.03914"W
Site Scale Factor	1.0001243655
Height	127.705sft

The North Carolina Department of Transportation uses a **Localized Coordinate System** which is very similar to North Carolina Zone 3200 from which it is derived.

Please take care in utilizing these coordinates to eliminate confusion of the two systems.

This file is to aid in the use of Real Time Kinematic (RTK) GPS during construction layout.

Datum Transformation Parameters

Datum Transformation computation not requested

Updated Default Projection (Transverse Mercator) Definition

Updated default projection not requested

Horizontal Adjustment Parameters

Northing coordinate of rotation center	460127.577sft
Easting coordinate of rotation center	1767810.855sft
Rotation about the center point	0°00'00"
Translation north	0.019sft
Translation east	-0.006sft

Scale factor 0.99999983

Vertical Adjustment Parameters

Northing coordinate of origin point 472273.834sft
 Easting coordinate of origin point 1785177.898sft
 Vertical separation at origin 0.042sft
 Slope north 2.424ppm
 Slope east -0.100ppm

Geoid Model Definition

GEOID99 (Conus)

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.060sft	0.007	R0000A-7 WGS84
Vertical	0.065sft	0.011	R0000A-7 WGS84
Three-dimensional	0.088sft	0.013	R0000A-7 WGS84

Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
Point	R0000A-7 WGS84	Northing	472273.834sft	Point	R0000A-7
Latitude	35°02'43.84825"N	Easting	1785177.898sft	Northing	472273.891sft
Longitude	79°43'03.98201"W	Elevation	406.998sft	Easting	1785177.880sft
Height	304.583sft	Horz error	0.060sft	Elevation	407.063sft
		Vert error	0.065sft	Utilized	Horz and Vert
		3D error	0.088sft	Quality	Survey quality
Point	GRANNY WGS84	Northing	504943.828sft	Point	GRANNY
Latitude	35°08'07.61741"N	Easting	1794500.656sft	Northing	504943.820sft
Longitude	79°41'14.58408"W	Elevation	557.429sft	Easting	1794500.668sft

Height	455.262sft
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Horz error	0.014sft
Vert error	0.048sft
3D error	0.050sft

Elevation	557.381sft
Utilized	Horz and Vert
Quality	Survey quality

Point	U3456-1_WGS84
Latitude	34°56'42.56346"N
Longitude	79°45'22.50410"W
Height	202.172sft

Northing	435832.529sft
Easting	1773381.985sft
Elevation	304.605sft
Horz error	0.021sft
Vert error	0.022sft
3D error	0.031sft

Point	U3456-1
Northing	435832.521sft
Easting	1773381.965sft
Elevation	304.583sft
Utilized	Horz and Vert
Quality	Survey quality

Point	R3421-6_WGS84
Latitude	34°58'05.65160"N
Longitude	79°50'50.32033"W
Height	175.495sft

Northing	444453.276sft
Easting	1746163.486sft
Elevation	277.087sft
Horz error	0.018sft
Vert error	0.003sft
3D error	0.018sft

Point	R3421-6
Northing	444453.290sft
Easting	1746163.498sft
Elevation	277.090sft
Utilized	Horz and Vert
Quality	Survey quality

Point	R0000A-13_WGS84
Latitude	34°59'46.27678"N
Longitude	79°50'46.02070"W
Height	99.248sft

Northing	454623.600sft
Easting	1746608.032sft
Elevation	200.776sft
Horz error	0.011sft
Vert error	0.002sft
3D error	0.011sft

Point	R0000A-13
Northing	454623.589sft
Easting	1746608.036sft
Elevation	200.774sft
Utilized	Horz and Vert
Quality	Survey quality

Point	R3421-8_WGS84
Latitude	34°58'59.28923"N
Longitude	79°48'19.96025"W
Height	246.765sft

Northing	449771.970sft
Easting	1758721.177sft
Elevation	348.615sft
Horz error	0.012sft
Vert error	0.013sft
3D error	0.018sft

Point	R3421-8
Northing	449771.958sft
Easting	1758721.175sft
Elevation	348.602sft
Utilized	Horz and Vert
Quality	Survey quality

Point	R2231-1_WGS84
Latitude	35°00'59.68816"N
Longitude	79°46'12.39863"W
Height	243.864sft

Northing	461860.363sft
Easting	1769429.995sft
Elevation	345.886sft
Horz error	0.017sft
Vert error	0.032sft
3D error	0.036sft

Point	R2231-1
Northing	461860.347sft
Easting	1769430.002sft
Elevation	345.918sft
Utilized	Horz and Vert
Quality	Survey quality

Point	R3421-13_WGS84
Latitude	35°02'05.29295"N
Longitude	79°46'08.68585"W

Northing	468490.792sft
Easting	1769790.195sft
Elevation	415.734sft

Point	R3421-13
Northing	468490.784sft
Easting	1769790.204sft

Height	313.772sft
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Horz error	0.012sft
Vert error	0.037sft
3D error	0.039sft

Elevation	415.771sft
Utilized	Horz and Vert
Quality	Survey quality

Point	R3421-9 - WGS84
Latitude	34°59'35.03521"N
Longitude	79°46'42.22392"W
Height	291.417sft

Northing	453321.090sft
Easting	1766882.140sft
Elevation	393.458sft
Horz error	0.011sft
Vert error	0.050sft
3D error	0.051sft

Point	R3421-9
Northing	453321.098sft
Easting	1766882.132sft
Elevation	393.408sft
Utilized	Horz and Vert
Quality	Control quality

Point	R3421-10 WGS84
Latitude	34°59'58.65396"N
Longitude	79°46'35.58803"W
Height	320.997sft

Northing	455704.679sft
Easting	1767452.925sft
Elevation	423.027sft
Horz error	0.016sft
Vert error	0.002sft
3D error	0.016sft

Point	R3421-10
Northing	455704.663sft
Easting	1767452.929sft
Elevation	423.025sft
Utilized	Horz and Vert
Quality	Survey quality